

## Federated States of Micronesia

### *Employment*

A total of 10,285 private sector employees were enrolled in the Social Security system in 1997. Of these, 767 individuals (7.4%) were from the fishing sector (Statistics Unit 1999).

Data from the 1994 census and the Statistics Unit (1999) census show:

**Table A2.4: Employment in FSM,  
1994 and 1998**

Category	Number of People (1994)	Number of People (1998)
Total Population	105,506	111,536
Population over age 15	59,573	68,377
Population in the Labor Force	25,972	35,033
Employed	21,756	32,254
Formal Workforce	14,381	15,940
Agriculture/Fishing	7,375	16,314
Subsistence Agriculture/Fishing	5,874	10,166
Market-oriented Agriculture/Fishing	1,501	6,148

Sources: National Census (1994); Statistics Unit (1999).

Of the 7,375 people who indicated in the 1994 census that their main activity was farming or fishing:

- 2,022 were primarily involved in fishing (7% female);
- 2,004 were involved in both gardening and fishing (17% female);
- Not included in these numbers were those who farmed and fished and worked part-time in a job/business.

Using the 1994 census data, the total population of the FSM was projected to be 115,045 in 2000 and 117,257 in 2001.

Gillett et al. (2001) estimated employment related to the tuna fisheries in the FSM:

**Table A2.5: Employment in Tuna Fisheries in FSM, 1999**

Category	No. of People Employed
Foreign Fishing Vessels	150
Domestic Tuna Enterprises	178
Locally-based Longliners and Seiners	86
Artisanal Vessels, Kosrae	25
Artisanal Vessels, Chuuk	100
Artisanal Vessels, Pohnpei	45
Artisanal Vessels, Yap	30
<b>Total</b>	<b>614</b>

Source: Gillett et al. (2001).

### *Volumes and Values of Fish Harvests*

Smith (1992a) stated that in the FSM “the available information on inshore fisheries production is incomplete and often vague.” Dalzell et al. (1996) used information from Smith (1992a) and from the nutrition literature to estimate the coastal fisheries production:

- Subsistence fisheries: 6,243 mt, US\$11,237,400
- Commercial fisheries: 637 mt, US\$1,483,544

Statistics Unit (1999) showed that 490 mt of fish and shellfish worth about US\$1.2 million was “purchased by local fishing markets” in 1997.

The HIES of 1998 showed that US\$18,496,000 was spent by households in the FSM on fresh and frozen fish, the vast majority of which would come from small-scale commercial fishing. Using average fish price information from the Statistics Unit (1999), this equates to 6,323 mt of purchased fish.

Fisheries Engineering (1995) carried out extensive fieldwork in Pohnpei and estimated the total coastal fishery production of Pohnpei Island to be about 1,780 mt (75% reef/inshore, 25% pelagic). This was partitioned as:

- Subsistence catch: 780 mt
- Commercial catch: 1,000 mt (of which about 28% was actually consumed by the commercial fishermen at home)

If the catch level reported in Pohnpei (32% of the FSM population) by the Fisheries Engineering (1995) is extrapolated to all of FSM, the catch by coastal fisheries would be about 5,500 mt. However:

- The per capita catches in the outer islands and in Chuuk are likely to be much higher than in Pohnpei.
- The population of the FSM has increased about 11% in the years since the survey.
- This extrapolation suggests that total FSM present day coastal catches are approximately 8,000 mt per year.

Gillett et al. (2001) indicated that about 2,000 mt of tuna is captured by small-scale coastal fisheries in the FSM. If pelagic catches represent 25% of the fish from small-scale fisheries (as suggested by the Fisheries Engineering study and by individuals knowledgeable in FSM fisheries), then the total catch from small-scale fisheries would be about 8,000 mt.

It is very difficult to make even a rough approximation of the FSM coastal catch of fish and shellfish. Considering the HIES data and the Fisheries Engineering data, it appears that the Dalzell et al. (1996) estimate of commercial production was especially low. In view of the above information and associated likely credibility, a crude indication of the coastal fisheries production would be 10,000 mt, about half subsistence and half commercial. At US\$2.90 per kg for the commercial catch and US\$2.00 per kg for the subsistence catch (30% value reduction being an allowance for getting the product to market [Lewington 2000]), this equates to US\$24.5 million.

For offshore industrial tuna catches, the following has been estimated in Gillett et al. (2001) using a variety of sources:

- During the years 1991–1999, an estimated 1,250,300 tons of tuna were caught in the FSM exclusive economic zone (EEZ). Of this amount, 86.3% was caught by purse seine, 8.8% by longline, and 4.8% by pole-and-line.
- The 1999 provisional Micronesian Fisheries Authority (MFA) figures show a total of 188,029 tons caught in the EEZ—92% by purse seine, 7.5% by longline, and the remainder by pole-and-line. In 1999, the overall catch consisted of 74% skipjack, 20.5% yellowfin, and 4.6% bigeye.

- From 1991–1999, the total amount of longline-caught (sashimi-grade) tuna was 38,836 tons. In 1999 the total amount exported was 1,725 tons.
- The 1999 catches in the FSM were made by the following nationalities:

**Table A2.6: Offshore Industrial Tuna Catches in the FSM EEZ, 1999**

Fishing Nation	Tuna Catch (tons)
Taipei, China	63,103
Japan	59,708
Korea, Republic of	55,885
Vanuatu	4,900
Federated States of Micronesia	2,499
People’s Republic of China	1,031
United States of America	599
Kiribati	250
Papua New Guinea	54
<b>Total</b>	<b>188,029</b>

EEZ = exclusive economic zone; FSM = Federated States of Micronesia.  
 Source: Gillett et al. (2001).

Micronesian Longline Fishing Company officials indicated that the recent FOB price for tuna is about US\$5,000 per mt.

The Micronesian Maritime Authority (MMA 2000) gives the following catch information:

**Table A2.7: Estimated Annual Catches of FSM by Fishing Method, 1991–1999 (mt)**

Fishing Method	1991	1992	1993	1994	1995	1996	1997	1998	1999
Purse Seine	90,972	109,967	153,716	179,934	159,684	128,786	66,382	71,027	117,829
Longline	9,944	12,645	14,830	15,710	18,639	11,004	9,514	9,163	8,918
Pole and Line	23,405	3,141	6,560	6,280	17,974	998	997	983	280
<b>Total</b>	<b>124,321</b>	<b>125,752</b>	<b>175,106</b>	<b>201,924</b>	<b>196,297</b>	<b>140,788</b>	<b>76,892</b>	<b>81,172</b>	<b>127,027</b>

FSM = Federated States of Micronesia; mt = metric ton.  
 Source: Micronesian Maritime Authority (2000).

In summary, selectively using the above information, an estimation of the 1999 total annual fisheries production in the FSM is given below:

**Table A2.8: Estimated Annual Fisheries Production of FSM, 1999**

<b>Fishing Sector</b>	<b>Volume (mt)</b>	<b>Value (US\$)</b>
Coastal Subsistence	5,000	10,000,000
Coastal Commercial	5,000	14,500,000
Offshore Locally-based	2,499	12,495,000
Offshore Foreign-based	127,000	144,000,000
<b>Total</b>	<b>139,499</b>	<b>180,995,000</b>

FSM = Federated States of Micronesia; mt = metric ton; US\$ = United States dollar.

### *Fishery Exports and Imports*

The official FSM statistics on exports and imports are regarded as being quite unreliable. Nevertheless, the official statistics on exports (Statistics Unit 1999) are presented in Table A2.9:

**Table A2.9: Estimated Annual Value of Fisheries Exports of FSM, 1996–1997 (US\$)**

<b>Export</b>	<b>1996</b>	<b>1997</b>
Trochus	155,084	0
Fish	9,845,548	4,351,025
Crabs and Lobsters	50,830	269,577
<b>Total Fishery Exports</b>	<b>10,051,462</b>	<b>4,620,602</b>
<b>Total Exports</b>	<b>10,777,986</b>	<b>4,878,387</b>
<b>% Fishery Total Exports</b>	<b>93.3</b>	<b>94.7</b>

FSM = Federated States of Micronesia; US\$ = United States dollar.  
Source: Statistics Unit (1999).

Gillett et al. (2001) state that in 1999 the total amount of longline-caught (sashimi-grade) tuna exported from locally-based boats was 1,725 tons. At US\$5,000 per ton, this would equate to US\$8,625,000.

The official statistics (Statistics Unit 1999) show imports of canned fish in the years 1997, 1996 and 1995 were US\$1,730,000, US\$977,000, and US\$1,041,000 respectively. Alternatively, the HIES indicates a retail expenditure of US\$4,429,000 on canned fish in 1998.

The 1987–1998 database of the Convention on the International Trade of Endangered Species (CITES) reports some unauthorized exports of turtles, clams, and corals.

### *Access Fees*

Gillett et al. (2001), using various sources, state that:

- According to records kept by the MFA, the FSM has received over US\$170 million in EEZ access fees paid since 1979 for the rights to fish for tuna.
- In fiscal year 1999, receipts from access fees totaled US\$15.4 million.
- In January 2000, there were seven bilateral and one multilateral foreign fishing agreements in place. In addition, there were nine agreements with domestically-based foreign vessels.
- In addition to the revenue from both foreign- and domestically-based bilateral arrangements, as party to the FFA-administered Multilateral Treaty with the United States, the FSM receives a further estimated US\$110,000 annually that is tied to fisheries development projects.
- An annual payment of goods and services is provided from the Japanese associations as part of the access agreement. In 1999, this was valued by MFA at US\$550,000.
- In fiscal year (FY) 1999 access fees represented an estimated 39% of nontax revenue and 22% of total domestic revenue for the national government.

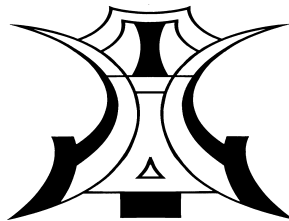
### *Levels of Marine Resource Consumption*

Preston (2000) using 1995 FAO production, import, and export data indicates the annual per capita fish consumption in the FSM as 72.0 kg.

In the above section on FSM fisheries production, it was estimated that the coastal commercial and subsistence production is about 10,000 mt annually. A relatively small portion of this is exported. The offshore locally based tuna vessels caught 2,499 mt in 1999, a relatively small portion of which is consumed in the FSM. If the amount of coastal subsistence and commercial exports is roughly equivalent to the local consumption of the locally based tuna vessels, then the annual per capita consumption of fisheries products is about 87.0 kg. The HIES indicates a retail expenditure of US\$4,429,000 on canned fish in 1998, which roughly equates to 27.0 kg of whole weight of fish per capita per year. Following this logic, the annual per capita consumption of fishery products (both imported and local) in the FSM would be about 114.0 kg. To this figure must be added any fish leakage from the tuna transshipment operations.<sup>5</sup>

### *Exchange Rates*

The FSM uses the US dollar (US\$) as currency.



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<sup>5</sup> In 1999, there were approximately 90,500 mt of tuna transshipped through FSM ports by purse seiners.